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ABSTRACT

Designed as a guideline for teachers and child study teams in a prevocational program for handicapped students, the manual presents goals, objectives and sample activities including the elements of career awareness, prevocational instruction, job simulation, and readiness for formal vocational instruction. Six sections are addressed: (1) assembly skills (collating, sorting, filing, folding, stapling, binding); (2) woodworking skills (hand tools, hardware); (3) graphic arts skills (press type, sign press, and offset printing); (4) measurement skills (linear measurement, money, time); (5) plastics skills (sign engraving, injection molding, heat sealing, laminating, vacuum forming); and (6) horticulture skills (plant growth and production). (CL)

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THE SPECIAL EDUCATION PREVOCATIONAL LEVEL MANUAL

PROJECT V.I.E.W. (Vocational Instruction and Experience Workshop)

ASSEMBLY SKILLS

WOODWORKING SKILLS

GRAPHIC ARTS SKILLS

MEASUREMENT SKILLS

PLASTIC SKILLS

HORTICULTURE SKILLS

1983

Region III Special Education
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PREFACE

The Prevocational Core Curriculum Manual is designed to serve as a guideline for teachers and child study teams who are affiliated with the Region III Prevocational Program: Project V.I.E.W. The Manual is comprised of goals, objectives, and sample activities including the elements of career awareness, prevocational instruction, job simulation, and readiness for formal vocational instruction.

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INTRODUCTION

For purposes of organization, the Manual is comprised of six sections: Assembly Skills, Woodworking Skills, Graphic Art Skills, Measurement Skills, Plastic Skills, and Horticulture Skills. There is some overlapping of objectives and activities amongst the sections. While the objectives in each section are listed in a logical order, they are not necessarily hierarchal. The teacher may need to skip or transpose the position of certain objectives. The activities listed are merely some suggestions for implementing the objectives. In some cases, the activities are listed from concrete to abstract. Special education teachers can and should utilize their own expertise in selecting techniques and materials for achieving these objectives.

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Region III Prevocational Curriculum Committee

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ASSEMBLY SKILLS

A. COLLATING

Goal: The student will learn how to complete collating tasks.

OBJECTIVES	ACTIVITY
A1. The student collates individual letter cards to form a complete alphabet.	1. The student will be instructed to place individual letter cards in a rightward progression. 2. The teacher demonstrates: e.g., "Pick up first card moving from left to right. Pick up second card, etc." 3. The student performs a collating activity and places each collated alphabet card in a crisscross stack. 4. Suggested material: Collating, Sorting and Filing Training Program, EBSCO Curriculum Materials, 1978.
A2. The student collates individual number cards to form a series of sequential numbers. (1 to 25)	1. Same as above.
A3. The student collates individual word cards following a specified model.	1. Given a specified model of word sets, the student will collate word cards to match sets. 2. Suggested material: see activity #4, for Objective A1.
A4. The student collates individual pages to form a booklet.	1. The teacher displays and discusses a completed booklet. 2. The student starts with the first page and collates the remaining pages in sequential order to form a booklet.
A5. The student learns the parts and procedure of a collating machine.	1. The teacher displays an electric collating machine and explains the different parts.

ACTIVITY	OBJECTIVE
	2. The student identifies the parts of a collating machine: a) paper length knob b) pusher arms c) paper bins d) counting bar
	3. The student verbalizes procedure for using a collating machine: a) set paper length using paper length knob. b) align/jog papers until all edges are even. c) having all pusher arms completely in front of paper bins insert jogged paper. d) push counting machine bar to read 00000. e) turn machine on to collate.
A6. The student demonstrates the ability to operate a collating machine.	1. Given a series of papers, the student collates them in order, using a collating machine.

B. SORTING

Goal: The student will learn how to complete sorting tasks.

B1. The student sorts letters, numbers and symbols.	1. Given a printers' box, the student sorts and places letters, numbers and symbols in appropriate slots.
B2. The student sorts stacks of word cards into individual units.	1. Given a stack of word cards the student sorts cards with identical words into piles.
B3. The student sorts printed pages.	1. Given a stack of printed pages, the student sorts identically numbered pages into piles.
B4. The student sorts parts (nuts, screws, bolts, springs, flat washers) for assembly.	1. The teacher displays segmented bins filled with parts. 2. The teacher discusses measurement terms for each part. 3. Given verbal instructions, the student sorts parts into appropriate boxes of individual work bins.

OBJECTIVE	ACTIVITY
B5. The student uses pictorial cues to match, sort and assemble parts (nuts, screws, bolts, springs, flat washers).	1. Given a diagram the student sorts and matches parts. 2. The student then assembles the parts according to diagrams. 3. Suggested material for objectives #4 and #5. Match, Sort, Assemble Tool Use, Exceptional Educaton, 1982.

C. FILING

Goal: The student will learn how to complete filing tasks.

C1. The student files printed material alphabetically.	1. The teacher discusses and demonstrates the use of file boxes or cabinets and index tabs. 2. Given printed material, the student files the material alphabetically behind the correct index tab.
C2. The student files material numerically.	1. Same as above. 2. Given numbered material, the student files the material numerically behind the correct index tabs.
C3. The student demonstrates the ability to file invoices categorically.	1. The teacher displays and discusses a sample invoice from The New View Company. 2. The teacher explains the categories involved (i.e., badges, booklets, catering, engraving, printing). 3. The teacher demonstrates filing the invoices categorically placing them behind the correct index tab. 4. Given invoices, the students correctly files them according to categories.

OBJECTIVE	ACTIVITY
D. FOLDING	
Goal: The student will learn how to complete folding tasks.	
D1. The student manually jogs 8-1/2" x 11" paper.	1. The teacher demonstrates how to jog paper using his/her hands. 2. Given a stack of misaligned paper, the student manually aligns the stack of paper.
D2. The student demonstrates the ability to prepare papers for folding using a paper jogger machine.	1. The teacher displays a paper jogger machine and explains the different parts. 2. The teacher demonstrates the mechanical process involved in aligning stacks of paper. 3. The student operates the paper jogger machine under teacher supervision.
D3. The student manually folds an 8-1/2" x 11" paper into halves and thirds.	1. The teacher demonstrates how to fold paper, first in half then in thirds. 2. Given a stack of paper, the teacher instructs the students on the two types of folds.
D4. The student demonstrates the ability to use an electric paper folding machine.	1. The teacher displays a paper folding machine and explains the different parts. 2. The teacher demonstrates the mechanical process involved in folding papers. 3. The student operates the paper folding machine under teacher supervision.

E. STAPLING

Goal: The student will learn how to complete stapling tasks.

OBJECTIVE	ACTIVITY
E1. The student demonstrates the ability to use an electric stapling machine.	1. The teacher displays an electric stapler and explains the different parts.
	2. The teacher demonstrates the mechanical operation involved in stapling.
	3. The student operates the electric stapler with teacher supervision.

F. BINDING

Goals: The student will learn how to complete binding tasks.

F1. The student prepares materials for binding using a punch binding machine.	1. The teacher displays a punch binding machine and explains the different parts.
	2. The teacher demonstrates the mechanical process involved in punching binding material.
	3. The student operates the punch binding machine with teacher supervision.
F2. The student demonstrates the ability to use a binding machine.	1. Same as above.

WOODWORKING SKILLS

It is recommended that throughout this unit, each student maintains a notebook on the safety tips, proper use, and maintenance of each tool.

For more information on the objectives and activities to follow, see Basic Hand Tools, EBSCO Curriculum Materials, 1982.

The teacher may want to preassess student knowledge of basic hand tools by using Basic Hand Tools Evaluation.

A. HAND TOOLS

Goal: The student will develop an understanding of basic hand tools.

OBJECTIVE	ACTIVITY
A1. The student identifies and reads a folding rule to the inch.	1. Under teacher guidance, the student measures various pieces of wood with folding rule and pencil. 2. Correct measurements should be written on the back of each piece of wood for self-checking purposes. 3. Job #1 activity sheet of Basic Hand Tools.
A2. The student identifies and reads a folding rule to the half-inch.	1. Same as above.
A3. The student identifies and reads a folding rule to the one-fourth inch.	1. Same as above.
A4. The student measures a piece of wood to a specific length and/or width.	1. Given specific length and width measurements, the student draws lines of accurate measurement.
A5. The student identifies and uses a powerlock rule to inch, half-inch, one-fourth inch.	1. Job #2 activity sheet.
A6. The student identifies a c-clamp and its proper use.	1. The student will be asked to attach the c-clamp to work surface. 2. The student clamps wood, using wood spacers to prevent damage.

OBJECTIVE	ACTIVITY
	3. The student properly removes c-clamp.
	4. Job #3 activity sheet.
A7. The student identifies the importance and maintenance of safety goggles.	1. The student and teacher list reasons why safety goggles should be used.
	2. The student places safety goggles properly on head.
	3. The student cleans goggles.
	4. Job #4 activity sheet.
A8. The student identifies the parts of a cross cut saw, back, hole, handle, saw teeth.	1. Given a labeled diagram for reference, the student identifies the parts of the saw used in the workshop.
A9. The student identifies the purpose of the different lengths and shapes of teeth on the saw.	1. The student discusses reasons for various types of saw teeth.
A10. The student demonstrates a smooth sawing stroke and finishing stroke.	1. The student measures wood to a specific length and/or width.
	2. The student clamps wood properly.
	3. The student cuts wood under teacher direction.
	4. Job #5 activity sheet.
A11. The student identifies proper maintenance of the cross cut saw.	1. The student wipes saw clean after each use and sprays or wipes blade with light oil to prevent rust.
A12. The student demonstrates safety, use and maintenance of the following tools: folding rule, powerlock rule, safety goggles, crosscut saw, c-clamps.	1. The student independently uses each tool properly and explains safety and maintenance features.

OBJECTIVE	ACTIVITY
A13. The student identifies and uses a try square.	1. The student checks for high/low spots. 2. The student checks for smoothness. 3. The student checks the cut edge of wood for squareness. 4. The student marks a square cut line. 5. Job #6 activity sheet.
A14. The student demonstrates proper use of the wood-worker's vise.	1. The student turns handle of vise counterclockwise to make jaws larger. 2. The student places practice board in vise. 3. The student turns handle clockwise to close vise. 4. Job #7 activity sheet.
A15. The student identifies and demonstrates proper use of the plane.	1. The student uses vise to clamp wood. 2. The student grips handle with dominant hand and grips other end with other hand. 3. The student uses forward strokes with grain of wood. 4. Job #8 activity sheet.
A16. The student demonstrates proper use of the sanding block.	1. The student uses block to measure correct amount of sandpaper. 2. The student installs paper into sander. 3. The student sands along the grain of the wood. 4. Job #9 activity sheet.

OBJECTIVE	ACTIVITY
A17. The student demonstrates the use of a claw hammer to drive a nail.	1. Given a premarked piece of wood, the student clamps wood using a c-clamp. 2. The student strikes a nail lightly to set nail in wood. 3. The student then gives more power to the stroke, always striking at a 90 degree angle.
A18. The student demonstrates the use of a claw hammer to remove a nail.	1. The student places a wood scrap under the head of a hammer. 2. The student slips the claw of the hammer under and around the nail head. 3. The student pulls the hammer handle toward their body. 4. Job #10 activity sheet.
A19. The student demonstrates safety, use and maintenance of the following tools: try square, vise, plane, sanding block, claw hammer, goggles, c-clamp, ruler.	1. The student independently uses each tool properly and explains safety and maintenance features.
A20. The student identifies the following parts of a hand drill: handle, crank and chuck.	1. Given a labeled diagram for reference, the student identifies the parts of a hand drill used in the workshop.
A21. The student demonstrates proper use of the hand drill.	1. The student places the drill bit in the drill by opening the chuck and placing the bit in the center. 2. Using premarked wood, the student holds the drill straight at 90 degrees to the wood. 3. The student pushes downward on handle, while turning crank at a constant speed. 4. Job #11 activity sheet.

OBJECTIVE	ACTIVITY
A22. The student identifies a flat head screwdriver and a Phillips head screwdriver.	1. Given both types of screwdrivers, the student uses a diagram to distinguish between the two types of screwdrivers.
A23. The student demonstrates his/her ability to use screwdrivers.	1. Given a predrilled board and a screw, the student chooses the appropriate screwdriver. 2. Using one hand to hold the screwdriver handle and one hand to hold the tip of the screwdriver in the slot of the screw, the student turns the screwdriver clockwise. 3. Job #12 activity sheet.
A24. The student uses a compass to draw a circle having a particular diameter.	1. Job #13 activity sheet.
A25. The student demonstrates use of the coping saw to make a straight cut.	1. The teacher demonstrates a smooth cutting stroke and correct use of the wrist to keep the saw blade on the cut line.
A26. The student demonstrates use of the coping saw to make an inside cut.	1. The student removes the blade, slips it into the wood, and reattaches the blade to the saw. 2. Job #14 activity sheet.
A27. The student demonstrates proper use of the adjustable wrench.	1. Under teacher supervision, the student tightens the jaws of the wrench on the bolt or nut. 2. Job #15 activity sheet.
A28. The student demonstrates the proper use of slip-joint pliers by tightening and removing nuts.	1. The student practices adjusting and readjusting pliers.

OBJECTIVE	ACTIVITY
	2. After teacher explanation, the student explains the purpose of the fine and coarse teeth.
	3. The student practices tightening and removing nuts from bolts by holding each nut in place with pliers and by using an adjustable wrench on bolt head.
	4. After teacher and student discussion, student lists jobs in which nuts and bolts are used.

At this time, post assess using Basic Hand Tools Evaluation.

See Basic Hand Tools Kit for projects which require the knowledge of the above tools.

B. ELECTRIC TOOLS

Goal: The student will develop an understanding of electric tools.

B1. The student demonstrates proper safety habits, use and maintenance of an electric hand sander.	1. The teacher displays a hand sander and explains the different parts.
	2. The teacher demonstrates proper use of the sanding machine.
	3. The student operates sanding machine under teacher supervision.
	4. The student brainstorms and discusses safety habits.
	5. The student replaces sand paper in machine.

OBJECTIVE	ACTIVITY
B2. The student demonstrates proper use, safety habits, and maintenance of a belt sander.	1. Using Belt Finishing Sander book for reference, the teacher displays a belt sander and explains the different parts. 2. The student views a filmstrip "More Millwork Machines" Belt Sander Unit 1, Number 1. 3. Using More Millwork Machines p. 6,7, the teacher demonstrates proper use. 4. The student operates machine, sanding a rough piece of wood. 5. The student brainstorms and discusses safety habits and maintenance procedures. 6. The student replaces sandpaper in machine. 7. The student completes an objective test on the belt sander (Hobar Publications, order #609).
B3. The student demonstrates proper use, safety habits, and maintenance of a band saw.	1. The teacher displays a band saw and explains the different parts. 2. The student views a filmstrip, Unit 2, Number 1, 2 of "More Millwork Machines." 3. Using More Millwork Machines, p. 17, 18 as reference, the teacher demonstrates proper use. 4. The student operates the machine, using a piece of wood having pencil lined measurements. 5. The student makes straight cuts. 6. The student makes curved cuts.

OBJECTIVE	ACTIVITY
	7. The student brainstorms and discusses safety habits and maintenance procedures.
	8. The student changes the blade on a band saw.
	9. The student completes an objective test on the band saw (Hobar Publications).
B4. The student demonstrates proper use, safety habits, and maintenance of the scroll saw.	1. The teacher displays a scroll saw and explains the different parts.
	2. The student views a filmstrip, Unit 2, Number 3 of "More Millwork Machines."
	3. Using More Millwork Machines, p. 21, 22 as reference, the teacher demonstrates the proper use of the scroll saw.
	4. Using a piece of wood having pencil lined measurements, the student operates the machine.
	5. The student brainstorms and discusses safety habits and maintenance procedures.
	6. The student changes the blade on a scroll saw.
B5. The student demonstrates proper use, safety habits, and maintenance of the jig saw.	1. The teacher displays a jig saw and explains the different parts.
	2. The teacher demonstrates proper use of the jig saw.
	3. Using a piece of wood having pencil lined measurements, the student operates the machine.
	4. The student brainstorms and discusses safety habits and maintenance procedures.
	5. The student changes the blade of a jig saw.

OBJECTIVE	ACTIVITY
	6. The student completes an objective test on the jig saw (Hobar Publications, order #602).
B6. The student demonstrates proper use, safety habits, and maintenance of the table saw.	1. The teacher displays a table saw and explains the different parts using <u>More Millwork Machines</u> as a reference.
	2. The teacher demonstrates proper use.
	3. The student operates the table saw under teacher supervision.
	4. The student brainstorms and discusses safety habits and maintenance procedures.
B7. The student demonstrates proper use, safety habits, and maintenance of a portable electric drill.	1. The teacher displays a portable drill and explains the different parts.
	2. The teacher demonstrates proper use.
	3. The student operates the machine, using a piece of wood having pencil markings, and a wood vise.
	4. The student brainstorms and discusses safety habits and maintenance procedures.
	5. The student loads and unloads the portable drill.
	6. The student completes an objective test (Hobar Publications, order #616).
B8. The student demonstrates proper use, safety habits, and maintenance of a drill press.	1. The teacher displays a drill press and explains the different parts using <u>Drill Press</u> book.
	2. The student views a filmstrip (Unit 3, Number 12) "More Millwork Machines."

	3. Using <u>More Millwork Machines</u> p. 30, 31 as reference, the teacher demonstrates use.
	4. The student operates the machine, using a piece of wood having pencil markings.
	5. The student brainstorms and discusses safety habits and maintenance procedures.
	6. The student loads and unloads the drill.
	7. The student completes an objective test (Drill Press, Hobar Publications, order #615).
B9. The student demonstrates proper use, safety habits, and maintenance of the lathe.	1. The teacher displays a lathe and explains the parts using <u>Lathe</u> book.
	2. The student operates the machine under teacher supervision using a piece of wood.
	3. The student brainstorms and discusses safety habits and maintenance procedures.

Materials used in electric tool unit: <u>More Millwork Machines</u>, DCA filmstrips and booklet, Model Photographic Learning Package for Woodworking Machines, Commercial Educational Distributing Services, Safety Exams, Hobar Publications.

C. HARDWARE

Goal: The student will improve and increase his/her knowledge of various hardware items.

C1. The student identifies the following types of hardware items: anchor screws, lag screws, toggle bolts, finishing nails, latches, brads, carriage bolts, washers, nuts, springs, hinges, braces, angles, (90 degree, 45 degree), dowels, grommets.	1. The teacher displays each hardware item and its proper label.
	2. The teacher places a variety of mixed hardware items on a table. The teacher calls out the name of one of the items. The students look through the hardware items and choose the specific item. The student who first picks out the correct item receives one point. The game continues.

GRAPHIC ARTS SKILLS

A. PRESS TYPE PRINTING

Goal: The student will learn how to complete small tasks using press type printing.

OBJECTIVE	ACTIVITY
A1. The student learns procedures for press type printing.	1. The teacher displays samples of press type printing and demonstrates the procedures. 2. The student verbalizes procedures for press type printing: a) Remove protective sheet covering the alphabet. b) Position letter to be press typed on clean paper using alignment marks. c) Shade letter with pen/pencil. d) Lift press type sheet to check print. e) Repeat until word/phrase is complete.
A2. The student demonstrates ability to use press type print.	1. Given a printed sample, the student matches samples using press type printing.

B. SIGN PRESS PRINTING

Goal: The student will learn how to complete small signs using the sign press machine.

B1. The student learns the parts and procedures of a sign press machine.	1. The teacher displays a sign press machine and explains the different parts and procedures. 2. The student identifies the following parts of the sign press machine: a) Platen b) Brayer c) Type letters d) Print ink

OBJECTIVE	ACTIVITY
	3. The student verbalizes procedure for using sign press machine: a) Set type letters. b) Ink platen and letters using brayer. c) Print.
B2. The student demonstrates ability to use sign press machine.	1. Printing a bumper sticker: a) The student selects color for bumper sticker. b) The student cuts the paper for the size of the bumper sticker. c) The student selects and sets type letters. d) The student selects and spreads ink on platen. e) The student uses brayer to spread ink on letters. f) The student sets bumper sticker on machine and prints.

C. OFFSET PRINTING

Goal: The student will utilize his/her knowledge of press type printing and sign press printing to operate an offset duplicating machine.

C1. The student learns the parts and procedures of an offset duplicating machine.	1. The teacher displays an offset duplicating machine and explains the parts and procedures. 2. The student identifies the parts of an offset duplicating machine. 3. The student verbalizes procedure for using an offset duplicating machine: a) Press type printing. b) Photocopying. c) Platemaking: Paper and Metal. d) Printing.

OBJECTIVE	ACTIVITY
C2. The student demonstrates ability to use an offset duplicating machine.	1. Printing personalized stationery (4" x 6"): a) The student uses press type printing to print name on 4" x 6" paper. (see objective A1.) b) The student photocopies personalized printed paper. c) The student makes a plate of personalized paper. d) The student sets personalized paper on duplicating machine and prints.

MEASUREMENT SKILLS

A. LINEAR MEASUREMENT

Goal: The student increases and improves knowledge and application of linear measurement.

OBJECTIVE	ACTIVITY
A1. The student uses a ruler to measure objects to the nearest inch, half inch, quarter inch, eighth inch, sixteenth inch.	1. The student makes a ruler using one inch markings and measures various objects to the nearest inch. 2. The teacher inserts one-half inch markings on the ruler and the student measures various objects to the nearest one-half inch. The activity continues with one quarter, one eighth, one sixteenth markings being added individually. 3. The student uses a commercial ruler to measure various objects to the nearest inch, half inch, quarter inch, eighth inch, sixteenth inch.

Goal: The student demonstrates an understanding of linear measurement.

A1. The student identifies a 12 inch "foot."	1. The teacher introduces the concept "12 inches equal 1 foot." Through discussion, repetition and reinforcement, the student learns to identify a 12 inch ruler as "1 foot." The student measures objects in the classroom in terms of feet. 2. The student draws a line of a specific length as designated by the teacher.
A2. The student measures objects in feet and inches.	1. The student uses a yardstick to measure objects in the room, reading the feet and inches. 2. The student draws a line of specific length, in feet and inches, as designated by the teacher.

OBJECTIVE	ACTIVITY
	3. The student gives measurements in terms of feet and inches.
A1. The student identifies a 36 inch "yard" and measures objects in yards, feet and inches.	1. The student uses a yardstick to measure objects in the room, reading the yards, feet and inches.
	2. The teacher introduces the concept "36 inches is one yard." Through discussion, repetition and reinforcement, the student learns to identify a 36 inch ruler as "one yard." The student measures objects in the classroom in terms of yards.
	3. The student draws a line of specific length, in yards, feet and inches, as designated by the teacher.
	4. The student draws a line of a specific length as designated by the teacher.
	5. Using a yardstick instead of a 12 inch ruler, the student gives measurements in terms of yards, feet, and inches.
A2. The student measures objects to the nearest inch, foot and yard.	1. The teacher presents the student with objects to be measured to the nearest inch, foot, or yard. The student measures the objects and correctly states the measurement to the nearest unit designated.
Goal: The student increases and improves knowledge and application of weight measurement.	
A1. The student identifies the term ounce and its relationship to weight.	1. The teacher explains that the ounce is a term used in measuring light objects. The student selects objects in the classroom and weighs and records the correct weights of the objects, using the term ounce.

OBJECTIVE	ACTIVITY
	2. The teacher displays cards with pictures of common objects on them. The student determines if it is appropriate for that object to be weighed in ounces.
	3. The student develops a list of twenty objects that can appropriately be measured in ounces.
A2. The student identifies the term pound and its relationship to weight.	1. The teacher explains that the pound is a term used in measuring objects. The student selects objects in the classroom and weighs and records the correct weights of the objects, using the term pound.
	2. The teacher displays cards with pictures of common objects on them. The student determines if it is appropriate for that object to be measured in pounds.
	3. The student develops a list of twenty objects that can appropriately be measured in pounds.
A3. The student identifies how many ounces are in a pound.	1. The teacher displays a chart of conversions with the following information: 1 pound = 16 ounces, 2 pounds = 32 ounces, 3 pounds = 48 ounces.
A4. The student identifies the abbreviations for ounce and pound.	1. The teacher displays a chart containing the abbreviations for ounce, pound. The teacher discusses the information with the student.
A5. The student determines the appropriate unit in which to measure and report weights.	1. The student is presented with a variety of objects or pictures of objects. The student weighs each of these objects or estimates their weight. The teacher then asks which objects would be more easily weighed by ounces, pounds. If the student has difficulty determining the best units for measurement, reinforce weight measurements again.

OBJECTIVE	ACTIVITY
	2. The teacher displays pictures of various objects. The student tells if the object is best weighed in ounces or pounds.
Goal: The student increases and improves knowledge and application of liquid measurement.	
A1. The student identifies how many ounces are in one cup.	1. Given a pitcher of water, the student fills a one cup measuring container. The student reads the container to determine the number of ounces in one cup.
	2. The student writes the information obtained in the above activity on the chalkboard. The student studies the measurement fact that 8 ounces = 1 cup.
A2. The student identifies how many pints are in a quart.	1. Given a pitcher of water and a quart container, the student fills a pint container and then fills the quart container. The student determines how many pints fill a quart. The student studies the measurement fact that 2 pints = 1 quart.
A3. The student identifies how many quarts are in a gallon.	1. Given a pitcher of water and a gallon container, the student uses a quart container to fill a gallon container. The student determines how many quarts are in a gallon. The student studies the measurement fact that 4 quarts = 1 gallon.
A4. The student determines the appropriate unit in which to measure and record liquid amounts.	1. The student uses a gallon of water in a gallon container. The student counts how many cups it takes to make a gallon, pints to make a gallon, quarts to make a gallon, using cup, pint and quart measures.

OBJECTIVE	ACTIVITY
A5. The student identifies the abbreviations fo fluid ounce, cup, pint, quart and gallon.	1. The teacher displays a chart with the abbreviations for fluid ounce, cup, pint, quart and gallon written on it.

B. MONEY

Goal: The student demonstrates an understanding of money concepts up to $1.00.

A1. The student recognizes a penny and understands its value (one cent). The cent sign is introduced.	1. The teacher shows the the student a group of pennies and discusses size, shape, and color. The teacher names the coin, "penny," and states that it is worth one cent. The student selects the correct number of pennies as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of pennies corresponding to the price on the tags. 3. Given a worksheet with sets of pennies and toys with price tags, the student draws a line from a set of pennies to the toy it will buy.
A2. The student recognizes a nickel and understands its value (five cents).	1. The teacher shows the student a group of nickels and discusses size, shape, and color. The teacher names the coin, "nickel," and states that it is worth five cents. The student selects the correct number of nickels as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of nickels corresponding to the price on the tags.

OBJECTIVE	ACTIVITY
	3. Given a worksheet with sets of nickels and toys with price tags, the student draws a line from a set of nickels to the toy it will buy.
A3. The student selects the correct coins (pennies and nickels) for values up to ten cents.	1. The teacher displays a group of pennies and nickels. The student selects the correct coins as requested by their teacher for values up to ten cents. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of pennies and nickels corresponding to the price on the tags. 3. Given a worksheet with sets of pennies and nickels and toys with price tags, the student draws a line from a set of coins to the toy it will buy.
A4. The student recognizes a dime and understands its value (ten cents).	1. The teacher shows the student a group of dimes and discusses size, shape, and color. The teacher names the coin,"dime," and states that it is worth ten cents. The student selects the correct number of dimes as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of dimes corresponding to the price on the tags. 3. Given a worksheet with sets of dimes and toys with price tags, the student draws a line from a set of dimes to the toy it will buy.

OBJECTIVE	ACTIVITY
A5. The student demonstrates an understanding of the value of a dime and its equivalent coins (10 pennies, 5 pennies, and 1 nickel, 2 nickels).	1. The teacher displays a group of pennies, nickels and dimes. Through discussion the student demonstrates an understanding of coins equivalent to a dime by selecting an appropriate set of equivalent coins from the group of coins. 2. Given a set of cards with pictures of food and prices on them, the student selects the different sets of coins equivalent to the price on a card. 3. Given a worksheet with a picture of a dime on the top and pictures of different sets of coins, the student circles the sets that are equivalent to a dime.
A6. The student selects the correct coins (pennies, nickels and dimes) for values up to 100 cents.	1. The teacher presents cans and packages of real food with prices on them (value up to 100 cents). There are pennies, nickels and dimes on the table. The student "buys" an item by selecting the correct set of coins. 2. Given a worksheet with pictures of toys with price tags and sets of coins, the student circles the coins in each set that are equivalent to the price on a tag. 3. Given a worksheet with 5 columns the student designates the number of dimes, nickels and pennies required for a given amount.

OBJECTIVE	ACTIVITY
A7. The student recognizes a quarter, and understands its value.	1. The teacher shows the student a group of quarters and discusses size, shape, and color. The teacher names the coin, "quarter," and states that it is worth twenty-five cents. The student selects the correct number of quarters as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of quarters corresponding to the price on the tags. 3. Given a worksheet with sets of quarters and toys with price tags, the student draws a line from a set of quarters to the toy it will buy.
A8. The student demonstrates an understanding of the value of a quarter and equivalent sets of coins (25 pennies, five nickels, two dimes and a nickel or 5 pennies).	1. The teacher displays a group of pennies, nickels, dimes, and quarters. Through discussion, the student demonstrates an understanding of coins equivalent to a quarter by selecting an appropriate set of equivalent coins from the group of coins. 2. Given a set of cards with pictures of food and prices on them, the student selects the different sets of coins equivalent to the price on a card. 3. Given a worksheet with a picture of a quarter on the top and pictures of different sets of coins, the student circles the sets that are equivalent to a quarter.

OBJECTIVE	ACTIVITY
A9. The student selects the correct coins (pennies, nickels, dimes, and quarters) for values up to 100 cents.	1. The teacher presents cans and packages of real food with prices on them (value up to 100 cents). There are pennies, nickels, dimes and quarters on the table. The student "buys" an item by selecting the correct set of coins. 2. Given a worksheet with pictures of toys with price tags and sets of coins, the student circles the coins in each set that are equivalent to the price on a tag. 3. Given a worksheet with 4 columns, the student designates the number of quarters, dimes, nickels and pennies required for a given amount at the left.
A10. The student consistently recognizes a half dollar and understands its value (fifty cents).	1. The teacher shows the student a group of half dollars and discusses size, shape, and color. The teacher names the coin, "half dollar," and states that it is worth fifty cents. The student selects the correct number of half dollars as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of half dollars corresponding to the price on the tags. 3. Given a worksheet with a picture of half-dollars and toys with price tags, the student draws a line from the picture of half dollars to the toy it will buy.

OBJECTIVE	ACTIVITY
A11. The student demonstrates an understanding of the half dollar and equivalent sets of coins.	1. The teacher displays a group of pennies, nickels, dimes, quarters, and half dollars. Through discussion, the student demonstrates an understanding of equivalent to a half dollar by selecting an appropriate set of coins from the group.
	2. Given a set of cards with pictures of food and prices on them, the student selects the different sets of coins equivalent to the price on a card.
	3. Given a worksheet with a picture of a half dollar on the top and pictures of different sets of coins, the student circles the sets that are equivalent to a half dollar.
A12. The student selects the correct coins for values up to 100 cents.	1. The teacher presents cans and packages of real food with prices on them (value up to 100 cents). There are pennies, nickels, dimes, quarters, and half dollars on the table. The student "buys" an item by selecting the correct set of coins.
	2. Given a worksheet with pictures of toys with price tags and sets of coins, the student circles the coins in each set that are equivalent to the price on a tag.
	3. Given a worksheet with 4 columns the student designates the number of half dollars, quarters, dimes, nickels and

OBJECTIVE	ACTIVITY
	pennies required for a given amount at the left.
A13. The student understands that one dollar has a value of 100 cents.	1. The teacher shows the student a group of dollars and discusses size, shape, and color. The teacher names the coin, "dollar," and also shows the dollar bill, and states that they are each worth one hundred cents. The student selects the correct number of dollars as requested by the teacher. 2. Given a worksheet with pictures of toys with price tags, the student circles the correct number of dollars corresponding to the price on the tags. 3. Given a worksheet with sets of dollars and toys with price tags, the student draws a line from a set of dollars to the toy it will buy.
A14. The student demonstrates an understanding of the value of one dollar and its equivalent coins.	1. The teacher displays a group of pennies, nickels, dimes, quarters, half dollars, and dollars. Through discussion, the student demonstrates an understanding of equivalents to a dollar by selecting an appropriate set from the group of coins. 2. Given a set of cards with pictures of food and prices on them, the student selects the different sets of coins equivalent to the price on a card. 3. Given a worksheet with a picture of a dollar on the top and pictures of

OBJECTIVE	ACTIVITY
	different sets of coins, the student circles the sets that are equivalent to a dollar.
A15. The student demonstrates an understanding of the dollar sign and cent mark by reading and writing the value of money over one dollar.	1. The teacher demonstrates the dollar sign and cent mark by writing amounts of money on the board and explaining the use of these signs. The student demonstrates an understanding by writing amounts on the blackboard as designated by the teacher. 2. The teacher writes amounts of money on the blackboard and the student reads the amounts. 3. The teacher dictates amounts of money and the student writes them using the dollar sign and the cent mark.
A16. The student computes addition and subtraction problems involving dollar signs and cent marks.	1. The teacher explains that addition and subtraction with money signs does not affect the computation process. Given worksheets with addition and subtraction of money, the student computes the answers.

Goal: The student increases and improves knowledge of money concepts up to $10.00.

A1. The student selects the correct combinations of coins and bills up to the value of $10.00.	1. The student "purchases" an object that has been priced by the teacher and selects the appropriate combination of coins and bills for this item. 2. Underlining the correct combination of bills and coins, the student completes a worksheet

OBJECTIVE	ACTIVITY
	prepared in the following manner: $1.51 = 1.00 .50 .25 .10 .05 .01
A2. The student determines the value of combinations of money up to $10.00.	1. The teacher and the student organize a classroom store of empty supermarket products that have price labels. The student goes "shopping" and then adds up the bill using paper and pencil or calculator. 2. The student is given a work sheet containing a list of products, prices, and related word problems. The student solves the problems.
A3. The student makes change for amounts up to $10.00.	1. Two students role play the parts of a cashier and a shopper in the classroom store. The shopper purchases an item for $4.59 and pays for it with a $10.00 bill. The cashier, starting with $4.59 counts up to $5.00 in coins and then counts bills to reach $10.00. 2. The student is given a teacher prepared worksheet of word problems involving the making of change. Following the word problems, diagrams of coins and bills are drawn. The student underlines the appropriate coins and bills demonstrating the correct amounts of change. 3. The student solves word problems on a teacher prepared worksheet involving the making of change.

OBJECTIVE	ACTIVITY

C. TIME

Goal: The student increases and improves knowledge and application of time concepts.

C1. The student tells time at five minute intervals.	1. The teacher prepares a worksheet containing blank clockfaces with times written beneath them. The student completes the sheet by drawing in the hands indicating the correct times.
C2. The student tells time to the nearest minute.	1. The teacher prepares a worksheet containing blank clockfaces with times written beneath them. The student completes the sheet by drawing in the hands indicating the correct times. 2. The student completes a teacher prepared worksheet containing clockfaces with hands drawn in. The student indicates correct times.
C3. The student demonstrates an understanding of a.m. and p.m.	1. The teacher tells the student that a.m. is before noon and p.m. is after noon. The teacher distributes a list of activities, e.g. eating breakfast, eating supper, etc. The student writes a.m. or p.m. next to the activity indicating the appropriate time of day when that activity would take place.
C4. The student tells time in two ways.	1. The teacher demonstrates the same time on a digital clock and a conventional clock. e.g. 1:45, quarter to two.

OBJECTIVE	ACTIVITY
	2. Given a digital clock and a conventional clock, the student demonstrates the same time on both clocks.
	3. Given a worksheet, the student matches corresponding times.
C5. The student identifies the closest hour when reading a digital clock.	1. The teacher notes that the closest hour is determined by the number of minutes following the hour. If the number of minutes is less than 30, the closest hour is the one shown. If the number of minutes is greater than 30, the closest hour is the next one.
	2. Given a worksheet of digital clock readings, the student identifies the closest hour.
C6. The student determines the time after the passage of a specified number of hours.	1. The student displays a time on a conventional clock. The student moves only the hour hand to show time changes as a result of addition or subtraction of hours.
	2. Given a worksheet, the student draws in hands to show appropriate times.
C7. The student determines the time after the passage of a specified number of minutes.	1. The student displays a time on a conventional clock. The student moves only the minute hand to show time changes as a result of addition or subtraction of minutes.
	2. Given a worksheet, the student draws in hands to show appropriate times.

OBJECTIVE	ACTIVITY
C8. The student regroups minutes to hours and minutes.	1. The teacher demonstrates that 70 minutes is equal to 1 hour and 10 minutes by moving the hands of a clock.
	2. Using the chalkboard, the teacher demonstrates the following example: 70 minutes = 60 minutes + 10 minutes, 70 minutes = 1 hour + 10 minutes.
	3. Given a worksheet, the student solves equations.
C9. The student determines the time after passage of a specified number of hours and minutes.	1. The student displays a time on a conventional clock. The student moves the hands to show time changes as a result of addition or subtraction of hours and minutes.
	2. Given a worksheet, the student draws in hands to show appropriate times.
	3. Using the chalkboard, the teacher demonstrates the regrouping process when adding and subtracting hours and minutes.
	4. Given a worksheet, the student computes addition and subtraction of hours and minutes with regrouping.

Goal: The student demonstrates an understanding of time concepts to the quarter hour.

C1. The student recognizes a clock and watch.	1. The teacher presents the student with various objects (cup, thermometer, portable radio, etc.) and the student identifies a small table clock by name. Follow the same procedure for a watch. This activity is repeated using pictorial rep-

OBJECTIVE	ACTIVITY
	resentations. Include a variety of sizes, shapes, and types of clocks and watches.
C2. The student identifies and reproduces the parts of a clock (face, numbers, hands).	1. The student places the numbers and hands on a clockface, learning their correct positions, names and functions. 2. The student names the parts of a clock (face, numbers, hands) on teacher-made pictures. The student fills in the missing numbers or hands as needed. 3. Given a round template, the student draws a clock-face, fills in the numbers from 1 to 12 in their correct position, and draws the hour and minute hands.
C3. The student expresses and sets the correct time on a clock to the hour.	1. Using a large demonstration clock, the teacher introduces the concept of "o'clock" by placing the minute hand on the 12 and the hour hand on various numerals. The student, through demonstration, modeling, and repetition names the various hours depicted. The teacher says "What time is shown on the clock?" The student responds, "It is seven o'clock." 2. Using a clock, the student observes the following: a) the minute hand moves more rapidly than the hour hand, and b) the minute hand moves only from one numeral to the next. 3. The teacher tells the student to set the demon-stration clock to three

OBJECTIVE	ACTIVITY
	o'clock. The student sets the clock and repeats the time. 4. Presented with picture representations of clock-faces, the student fills in the correct time. 5. Matching activities are also used to reinforce the activity above. 6. Given times of day (1 o'clock, 3 o'clock, etc.), the student draws the clock hands in their proper positions on a preprinted clockface.
C4. The student expresses time to the hour using the numerical form 0:00 (1:00, 2:00, 3:00, etc.).	1. The student matches respective times when presented in o'clock and numerical (0:00) forms. 2. The student matches clock-faces to the numerical form for expressing time. 3. Given clockfaces set to specific times, the student fills in the correct time to the hour in both o'clock and numerical form.
C5. The student identifies the right side of the clockface as "after the hour" and the left side of the clock as "to the hour."	1. The teacher introduces representations of the clockface which are shaded in two colors, one for "after the hour" and one for "to the hour." The teacher explains that the clockface has two sides. The numbers one to five are on the "after" side and the numbers seven to eleven are on the "to" side. The numbers twelve and six are on the line between the two halves and are special. The student practices placing and drawing the hour hand on various numbers identifying the

OBJECTIVE	ACTIVITY
	position as being on the "after" side or "to" side of the clockface.
C6. The student expresses and sets the correct time on a clock to the half hour.	1. Using a large demonstration clock, the teacher introduces the concept of half past the hour by placing the minute hand on the 6 and the hour hand on various numerals. The student, through demonstration, modeling, and repetition names the various half hours depicted. The teacher says "What time is shown on the clock?" The student responds, "It is seven-thirty."
	2. Using a clock, the student observes the following: a) the minute hand moves more rapidly than the hour hand, and b) the minute hand moves all the way around the face while the hour hand moves only from one numeral to the next.
	3. The teacher tells the student to set the demonstration clock to three-thirty. The student sets the clock and repeats the time.
	4. Presented with picture representations of clock-faces, the student fills in the correct time.
	5. The teacher presents matching activities to the student reinforcing the above activity.
	6. Given times of day (1:30, 3:30, etc.), the student draws the clock hands in their proper positions on a preprinted clockface.

OBJECTIVE	ACTIVITY
	7. The student matches respective times when presented in o'clock and numerical (0:00) forms.
	8. The student matches clockfaces to the numerical form for expressing time.
	9. Given clockfaces set to specific times, the student fills in the correct time to the half hour in both o'clock and numerical form.
C7. The student expresses and sets the correct time on a clock to the quarter hour.	1. Using a large demonstration clock, the teacher introduces the concept of quarter hour by placing the minute hand on the 3, 6, or 9 and the hour hand on various numerals. The student, through demonstration, modeling, and repetition names the various hours depicted. The teacher says, "What time is shown on the clock?" The student responds, "It is seven-fifteen," etc.
	2. Using a clock, the student observes the following: a) the minute hand moves more rapidly than the hour hand, and b) the minute hand moves all the way around the face while the hour hand moves only from one numeral to the next.
	3. The teacher tells the student to set the demonstration clock to three-fifteen. The student sets the clock and repeats the time.
	4. Presented with picture representations of clockfaces, the student fills in the correct time.

OBJECTIVE	ACTIVITY
	5. The teacher presents matching activities to reinforce the above activity.
	6. Given times of day (1:15, 3:45, etc.), the student draws the clock hands in their proper positions on a preprinted clockface.
	7. The student matches respective times when presented in o'clock and numerical (0:00) forms.
	8. The student matches clockfaces to the numerical form for expressing time.
	9. Given clockfaces set to specific times, the student fills in the correct time to the quarter hour in both o'clock and numerical form.

PLASTICS

A. SIGN ENGRAVING

Goal: The student will learn how to complete a plastic engraved sign.

OBJECTIVE	ACTIVITY
A1. The student identifies the purpose of the sign engraver.	1. The student observes a teacher demonstration of the sign engraver.
A2. The student identifies each part of the sign engraver and its function.	1. The student identifies the following features of the sign engraver: a) Master type bar. b) Stylus tip. c) Letter lock. d) Clamping screw. e) Finger grip. f) Tracing point. g) Position clamping knobs. h) Type holding bars
A3. The student identifies the various engraving materials. Laminated plastics, solid color plastics, plexiglass, metals and woods.	1. Given a selection of materials, the student will identify these materials verbally.
A4. The student sets type through accurate measurement and centering skills.	1. The student selects type sizes appropriate to size of sign. 2. The student sets type by copying from a printed page. 3. The student completes a given assignment of producing the final product of an engraved sign.

B. INJECTION MOLDING

Goal: The student will increase their knowledge of plastic injection.

OBJECTIVE	ACTIVITY
B1. The student identifies the purpose of the injection molder.	1. The student observes the teacher demonstrating the parts and uses of an injection molder.
B2. The student will learn what materials are used in production with the injection molder.	1. The student arranges an assembly line of all injection molding materials.
B3. The student demonstrates the ability to use the injection molding machine.	1. The student displays finished projects of screwdrivers, checkers, forks, numbers and letters as a means of evaluation.

C. HEAT SEALING

Goal: The student will learn how to complete heat sealing tasks.

C1. The student identifies the purpose and functions of the heat sealer.	1. The student will observe a teacher demonstration of the heat sealer.
C2. The student identifies each part of the heat sealer and its functions.	1. The student will point out the features as the work is in process. 2. The student completes a given project using the heat sealer.

D. LAMINATING

Goal: The student will learn how to complete laminating tasks.

D1. The student demonstrates the ability to properly use a small laminating machine.	1. The student observes a teacher demonstration of the laminating machine. 2. The student identifies the different parts of the laminating machine and its functions.

OBJECTIVE	ACTIVITY
	3. The student operates the laminating machine under teacher supervision.

E. VACUUM FORMING

Goal: The student will increase his/her knowledge of vacuum forming in the plastics area.

E1. The student identifies the purpose of the vacuum forming machine.	1. The teacher demonstrates the use of the vacuum forming machine.
E2. The student identifies the materials used in vacuum forming production.	1. The student identifies each material and its purpose. 2. The student will assemble all materials in preparation of use.
E3. The student evaluates his/her finished product.	1. The student produces a vacuum formed plastic sign.

HORTICULTURE SKILLS

A. PLANT GROWTH

Goal: The student will learn how plants grow under various conditions.

OBJECTIVE	ACTIVITY
A1. The student recognizes the unique features of the Klima-Gro system greenhouse.	1. The student observes a detailed teacher demonstration of the Klima-Gro Greenhouse. 2. The student recognizes and describes the functions of the Klima-Gro.
A2. The student determines what plants can and cannot grow in the Klima-Gro.	1. The student notes the 21" height of the greenhouse.
A3. The student describes the differences of plant growth according to individual plant characteristics.	1. Given a selection of foliage and flowering plants, the student will choose those compatible for growth. 2. The student understands moisture and light in relation to plant growth. 3. Through discussion, the student understands what is needed to make plants grow. 4. Using the plant and flower charts the student chooses compatible plants for the Klima-Gro.
A4. The student assembles necessary materials for planting.	1. The student selects a sterile soil mix pre-packaged. e.g. (Pro Mix, Ready-Earth). 2. The student selects a plant fertilizer containing nitrogen, phosphorus, and potassium. 3. The student uses the Klima-Gro moisture sensor to maintain the frequency of watering.

OBJECTIVE	ACTIVITY

B: PLANT GROWTH PREPARATION

Goal: The student will learn how seeds germinate and how to mix potting soils.

B1. The student will become familiar with the vocabulary used to germinate seeds and make potting soil. a. germinate b. seeds c. filter paper d. petri dish e. soil f. sand g. peat moss h. vermiculite (perlite) i. trowel	1. The student will match vocabulary words with correct definitions.
B2. The student will become familiar with necessary materials such as: a. seeds b. filter paper c. petri dish d. soil e. peat moss f. mixing pan g. trowel h. plastic film i. measuring cup	1. The student will assemble the materials needed. 2. Through discussion the student will understand what is needed to make seeds germinate and to make potting soil.
B3. The student will demonstrate the correct procedure for germinating seeds, realizing that seeds need warmth, sun and water in order to germinate.	1. The student will: a. put filter paper in petri dish. b. water filter paper completely. c. put 10 seeds on the wet filter paper, then put lid on dish. d. put dish in sunny, warm place. Keep wet.

OBJECTIVE	ACTIVITY
	e. observe dish after 4 days - after 7 days.
* Please note - See Math Curriculum Guide - Percentages-Decimals	
	f. compute percent of seeds that did grow.
B4. The student will learn to germinate seeds from last year's flowers.	1. The student will repeat activity 3 using seeds from last year's flowers.
B5. The student will realize that gardeners often have their own special soil mixture; and that plants need soil that allows air and water to get to roots.	1. The student will demonstrate the correct procedure for mixing potting soil: a. fill the measuring cup with soil and put the soil into the plastic mixing pan. b. put 1 cup of perlite into the mixing pan. c. put 1 cup of peat moss into the mixing pan. d. mix well with the trowel then cover the pan with plastic wrap.

C. VARIED PLANT GROWTH METHODS

Goal: The student will learn that plants can be grown without seeds.

OBJECTIVE	ACTIVITY
C1. The students will become familiar with the vocabulary involved in propagation methods. a. stem cuttings b. leaf cuttings c. leaf-bud cuttings d. root cuttings e. division	1. The student will use a worksheet to define different ways to grow plants.
C2. The students will become familiar with necessary materials such as: a. paring knife b. peat moss c. dibble d. trowel e. perlite f. vermiculite	1. The student will gather necessary materials and with teacher direction will begin their cuttings.
C3. The student will identify various types of plants used in lesson. a. Geranium b. Coleus c. Wandering Jew d. Begonia e. Impatiens	1. The teacher will help students to identify flowering plants.
C4. The students will learn which propagation methods are used for the different plants. a. The students will obtain necessary materials for their method of propogation.	1. Different students will be assigned a certain method to demonstrate. Example: A. Leaf Cutting - Begonia, Violets, Jade. a. Put stem of leaf in soil. B. Root Cutting - Wandering Jew. a. Root in water. C. Division - Snake Plant a. Divide stems, pull apart roots. Put

each in own pot.

OBJECTIVES	ACTIVITY
C5. The students will be aware of follow-up directions once cuttings are made.	1. The students will be responsible for watering their cuttings.
C6. The students will recognize that once cuttings root, some can be transplanted into their own pots.	1. The students will each explain how their cuttings were done and what they observed as it rooted.

D. PLANT PRODUCTION

Goal: The student will be able to transplant seedlings.

Materials: Mixing pan, draining pan, trowel, soil, peat moss, vermiculite or perlite, (4) 8 cm. pots, dibble, seedlings from activity #3, water.

D1. The student will prepare a soil mixture for transplanting.	1. Introduce and discuss use of materials to be mixed. a. soil b. peat moss c. vermiculite or perlite 2. Mix in mixing pan: 1 cup soil 1 cup peat moss 1 cup vermiculite or perlite
D2. The student will fill a pot with soil mixture.	1. Using the trowel each student will fill a pot with soil mixture and place it in draining pan.
D3. The student will transplant a seedling into a pot.	1. Using the dibble, have the student dig down around the seedling very carefully. 2. Lift the seedling from the pot holding the seedling by the stem in one hand. 3. With the first finger of

	the other hand make a hole in the soil of an 8 cm. pot.
OBJECTIVE	ACTIVITY
	4. Place seedling in the hole up to the leaves pushing the soil tightly around the seedling with thumb and first fingers.
D4. The student will care for the transplanted seedlings.	1. Have student pour water into the draining pan.

E. GREENHOUSE

Goal: The student will recognize the vocational and recreational value of horticulture.

E1. The student will become familiar with vocabulary involved in seed preparation. a. trowel b. centimeters c. drain d. strainer e. embryo f. germinate	1. The student will match vocabulary words with correct definitions.
E2. The student will become familiar with necessary materials such as: a. seeds b. 8 cm. pot c. plastic wrap d. mixing pan e. wire strainer f. water	1. The student will assemble the materials needed. 2. Through discussion, the students will understand what is needed to make plants grow.
E3. The student will demonstrate the correct procedure for growing plants from seeds.	1. The student will a) put "seed starter" soil in pot. b) put seeds onto soil - not too closely. c) with strainer, shake soil over seeds. d) put water in drain tray and insert pot in green-

house.

OBJECTIVE	ACTIVITY
E4. The students will recognize when seeds have started to germinate.	1. The student will do the following procedures - a) cover the pot with plastic b) remove plastic after seedling comes up.
E5. The students will understand that plants need water and light to grow.	1. The student will properly water and provide light for germinating seeds.
E6. The student will understand that too much or insufficient water and light is no good.	1. The student will experiment with environmental monitoring.
E7. The student will recognize the difference between seed leaves and true leaves.	1. The teacher will demonstrate when plants have their true leaves and are ready to be transplanted.

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